

## **MODERATOR BIOGRAPHY**

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### **DR. RICHARD LANGAN**

Dr. Richard Langan is director of the University of New Hampshire's (UNH) Atlantic Marine Aquaculture Center and the Center's Open Ocean Aquaculture Project, which develops environmentally sound practices and advanced technology for raising native, cold-water finfish and shellfish in exposed oceanic environments.

He is also co-director of the NOAA-UNH Cooperative Institute for Coastal and Estuarine Environmental Technology, which develops tools and technologies for clean water and healthy coastal habitats nationwide.

A member of the graduate faculty in the Department of Zoology, Dr. Langan conducts research in molluscan shellfish aquaculture and restoration, and the development and assessment of marine and estuarine water and habitat quality monitoring programs.

Prior to his tenure at the university, he was a commercial fisherman and the owner and operator of seafood and shellfish aquaculture businesses. He received a Ph.D. at the University of New Hampshire.

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## **PANELIST BIOGRAPHIES**

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### **DR. H. WILLIAM HARRIS, JR.**

Dr. William Harris, Jr. is the chief scientific officer, president and a member of the Board of Directors of MariCal Inc., a marine life sciences and technology company based in Portland, Maine.

MariCal operates on a global basis and has developed multiple unique technologies for aquaculture producers. Dr. Harris founded MariCal in 1996 in partnership with two other research scientists Steve Hebert, M.D., presently Chairman of Physiology at Yale University, and Edward Brown, M.D., presently Professor of Medicine at Harvard Medical School.

In his early career, Dr. Harris was a faculty member and staff physician at The Children's Hospital, Harvard Medical School in Boston, Massachusetts.

Dr. Harris has served on multiple international committees, authored over 150 peer reviewed publications and is senior inventor on 23 issued US and international patents.

He holds a Ph.D. in Biochemistry from Harvard University and a M.D. from Harvard Medical School.

## PANELIST BIOGRAPHIES

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### DR. DAVID J. KYLE

Dr. David Kyle is president and chief scientific officer of Advanced BioNutrition Corporation, a biotechnology company dedicated to providing a sustainable alternative to the use of fish meal and fish oil in the aquaculture industry.

Dr. Kyle received his Ph.D. in lipid biochemistry in 1980 at the University of Alberta. He did his postdoctoral research at Michigan State University, the Institute for Chemical Research in Tokyo, the Center for Nuclear Studies in Paris, and the University of Essex in the UK, before leading a research team studying algal-based nutrition and life support systems for NASA at the Martin Marietta Corporation in Baltimore, MD.

In 1985 he co-founded Martek Biosciences Corporation, a publicly held biotechnology company focused on omega-3 nutrition. In 2000, Dr. Kyle became the U.S. director of the Mother and Child Foundation, an international non-profit organization dedicated to the better understanding of omega-3 nutrition during pregnancy.

### DR. SANDRA SHUMWAY

Dr. Sandra Shumway's research spans more than 25 years in shellfish biology, filter-feeding, physiological ecology of marine invertebrates. Dr. Shumway worked for 11 years as a research scientist with the State of Maine Department of Marine Resources and as an adjunct scientist at the Bigelow Laboratory for Ocean Sciences.

Her primary research focus has been on problems directly applicable to industry needs, e.g. distribution of toxins in individual shellfish tissues, detoxification rates, and timing and extent of toxicity between bivalve species with the goal of establishing species-specific closures.

In 2000, Dr. Shumway organized and co-chaired the National Shellfish Workshop, a forum sponsored by the Cooperative Research and Information Institute designed to develop a National Shellfish Plan. Dr. Shumway was the first and, thus far, only woman to serve as President of the National Shellfisheries Association in its 95 year history.

Dr. Shumway received a Ph.D., D.Sc. from the University College of North Wales.

## PANELIST BIOGRAPHIES

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### **DR. MICHAEL C. CREMER**

Dr. Michael Cremer has 37 years of experience in domestic and international fisheries and aquaculture in the United States, Asia, Latin America and Africa. He currently serves as the technical director of global aquaculture programs for the U.S. Soybean Export Council (USSEC).

These programs focus on research, development and demonstration of feed-based aquaculture technologies and the use of soy products in aquafeeds for freshwater and marine fish and shrimp. USSEC currently operates research and international marketing activities in China, Southeast Asia, India, Latin America, the Middle East and Europe, as well as the United States.

### **DR. BRUCE ANDERSON**

Dr. Bruce S. Anderson is president of the Oceanic Institute, a not-for-profit research organization in Hawaii dedicated to sustainable aquaculture development, improved coastal resource management, and marine science education.

Dr. Anderson was a member of the Marine Aquaculture Task Force convened by the Wood Hole Oceanographic Institution that recently submitted recommendations on research needs. In addition, he has extensive experience in environmental management and public health issues in Hawaii and the Pacific Islands.

From 1999 through 2002, Dr. Anderson was Director of Health for the State of Hawaii and served as Deputy Director for Environmental Health from 1987 through 1998. Before assuming the leadership of the Oceanic Institute, he was director of the Environmental Health Program at the University of Hawaii School of Medicine.

He holds a Ph.D. in biomedical sciences from the University of Hawaii and an M.P.H. in epidemiology from Yale University.